

ABSTRACT OF THE DISCLOSURE

A combustion-based system and related method includes a combustor for burning a combustible material, wherein an exhaust gas stream output by the combustor includes NO<sub>2</sub> and at least one metal including mercury. An ultraviolet light source is in optical communication with the exhaust gas stream. Ultraviolet light from the light source photochemically dissociates at least a portion of the NO<sub>2</sub> to form an NO<sub>2</sub> reduced exhaust stream. A sorbent containing filter media receives the NO<sub>2</sub> reduced exhaust stream and as a result of the reduction in NO<sub>2</sub> provides improved trapping efficiency of mercury.